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The Institute Spokesman

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Servicing Carburetor Air Cleaners*

ARE THE CAR MANUFACTURERS' RECOMMENDATIONS BEING FOLLOWED?

By WALTER E. BLAINE, Field Editor of CHEK-CHART

Air cleaners are of vital importance on present day cars. Each year car manufacturers put additional stress on the importance of regular and correct air cleaner service. Nevertheless, because of conflicting information and because recommended oils are not always available, these units are being abused by service personnel the country over.

It is not the purpose of this article to try to tell the car manufacturers what SAE grades of motor oil they should recommend for their air cleaners. Car manufacturers have definite reasons for establishing the grades they recommend. Likewise, the air cleaner manufacturers also have definite reasons for recommending the SAE grades as displayed on the outside of their cleaners. The point is that not only is the manufacturer's recommendation different in many cases from the air cleaner manufacturer's recommendation, but service stations have their own (often times improper) ways of servicing these units. Possibly there is some way to remedy this situation.

One cause for car manufacturer's lack of agreement on the SAE grade of oil to use, may be the differences in velocity at which the air on its way to the carburetor impinges on the oil in the oil bath type of air cleaner. The velocity may vary due to different carburetor design, engine design, etc. Therefore, if too light a grade of oil is used with some designs of engines and carburetors, there is a possibility that some oil may be sucked into the combustion chamber.

Another reason may be that if too heavy a grade of oil (say an SAE 50) is used at around zero temperatures in the oil bath type air cleaner, the suction of the entering air may be great enough to cause the heavy

oil to be pulled up into the air space, where it forms a dam, entirely chokes off the incoming air, and makes starting impossible.

FORWARD MARCH SPOKESMAN DOUBLES SIZE

Conceived and born in April 1937, the Institute Spokesman began its career of carrying timely information to the Grease Industry. Under the parentage of the National Lubricating Grease Institute it has been issued monthly since its inception and has enjoyed a healthy increase in reader interest and circulation.

Now beginning its fifth year it reaches some two thousand readers directly interested in Greases as well as the members of the Institute, all of whom are buyers or producers of Lubricating Greases. Many have recognized it as an ideal medium with which to reach the Grease Industry and have been persistent in their requests for advertising space.

At its last meeting the Directors decided to increase the size of the publication from four to eight pages to accommodate these requests for advertising space. Part of the additional four pages will be reserved for advertising and part will be devoted to additional editorial material in an effort to more effectively cover all phases of the Grease Industry—its products and their application and uses.

The first issue of the new and enlarged "Institute Spokesman" will appear next month—April—its Fourth Birthday. There is some advertising space available for those who act at once. Rates can be obtained by writing George W. Miller, Executive Secretary, 498 Winspear Avenue, Buffalo, New York.

"The Institute Spokesman" is the official journal of the Lubricating Grease Industry.

Thus it may be seen that either too light a grade or too heavy a grade of oil may be objectionable in oil bath type air cleaners.

For several reasons, the average service station is likely to pay little heed to the grade of oil to be used, as recommended by the car manufacturer. One reason is that few, if any car manufacturers, recommend oil as heavy as SAE 50 for use in the crankcase, and therefore, SAE 50 is seldom carried in stock, although it is quite universally recommended for summer use in air cleaners. The easiest way out, unfortunately a common practice used by service stations, is to use whatever SAE grade of oil is being dispensed at that particular season of the year. This is seldom an oil as heavy as SAE 50, even in summer weather.

Observation of service stations' methods of servicing wire gauze type air cleaners, discloses that it is not an uncommon practice, after the circular wire gauze unit has been cleaned in gasoline or kerosene, for the attendant to grab the nearest oil can handy and squirt whatever grade of oil it contains, on the cleaning unit. Sometimes the unit is merely dipped into crankcase drainings. To service cleaners in this manner is unfair to the manufacturer as well as the car owner.

WIRE GAUZE TYPE

For their 1941 models, out of the eighteen major car manufacturers in the U. S., five have discontinued the use of the wire gauze type air cleaner and use the oil bath type as standard equipment. Eight recommend SAE 50 the year 'round for wire gauze type, three merely recommend "motor oil" (with no SAE grade specified), one recommends the use of the same SAE grade as is being used

(Continued on page 2)

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(Continued from page 1)

in the engine, and one recommends SAE 30 summer and 20W winter.

Since the purpose of the oil used to wet the wire gauze type is to catch the incoming dust, it would appear that SAE 50 would serve this purpose better than a lighter grade oil; also that there would be no necessity for recommending different seasonal grades. A uniform recommendation of SAE 50 could possibly be established for wire gauze type cleaners. While SAE 50 might be the most desirable, it is not the most practical from a service standpoint because of not being carried in stock in many service stations at some seasons. Even SAE 40 is not always available in some stations because few present engine designs require anything heavier than SAE 30.

OIL BATH TYPE

It might be desirable that air cleaner manufacturing companies and car manufacturers get together and establish uniform SAE motor oil grade recommendations for air cleaners. Without question, the proper servicing of air cleaners plays an important part in extending the efficient operation of gasoline engines. To do this, the oil bath type of air cleaner must also be taken into consideration.

All but one of the eighteen major car manufacturers offer oil bath type air cleaners either as standard or optional equipment in 1941. The largest group (five) recommend SAE 50 in summer, No. 20W in winter. The next largest group (four) recommend the same SAE grade as is being used in the engine. Two recommend SAE 50 summer, SAE 30 winter. Two recommend SAE 50 the year 'round. One each recommends SAE 50 summer, SAE 20 winter; SAE 50 summer, SAE 40 winter; SAE 50 summer, lighter grades winter. One recommends merely "motor oil" and does not specify any particular grades. No wonder operators servicing these units are inclined to do it "any old way."

WHAT CAN BE DONE

It has been pointed out that service stations are not entirely to blame for not following the car manufacturer's recommendation for the SAE grade of oil to be used. Uniform servicing instructions for the wire gauze type would not be difficult to establish. It appears that, since nearly half of the car manufacturers now recommend SAE 50 the year 'round, this grade could be standardized for this type of cleaner. If this is done, enough pressure could be put upon lubrication service stations to influence them to stock SAE 50. The other alternative would be to standardize on a lighter grade which is already carried in their stock, or to recommend the same grade as is being used in the engine, at time of servicing the air cleaner.

If an SAE 50 could or would be standardized for year 'round use in the wire gauze type, then the problem of the summer recommendation for the oil bath type would be simplified, as a majority of car manufacturers now recommend this grade (SAE 50) for summer use. A uniform winter recommendation of a grade or grades of oil that would function properly in oil bath cleaners being used on all makes and models of cars, may be impossible to establish because of reasons pointed out near the beginning of this article. However, assuming that oil companies would stock their service stations with SAE 50 for this purpose, it might be plausible to establish a recommendation of SAE 50 for summer, and "same grade as

being used in engine" for winter, for all oil bath type cleaners, for all makes of cars.

TO SUM UP

That car manufacturers are extremely interested in the correct servicing of air cleaners, is evidenced by the fact that they issue special bulletins to their service divisions on this subject. Yet many service stations do not follow servicing instructions for reasons already mentioned. Uniformity and simplification of recommendations would be of mutual benefit to the air cleaner manufacturer, the car owner and the car manufacturer. Anything that can be done to bring service divisions, manufacturers, and oil companies in closer unison is always for the better.

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Conspicuous among tiresome and tedious procedures in the petroleum laboratory is the grease working operation preparatory to running penetration tests for determining consistency of worked greases according to A. S. T. M. Test D-217, which requires that the grease sample be "worked by subjecting it to 60 full double strokes of the standard grease worker plunger."

Complete information on The Motor-Matic grease worker can be obtained by writing — Precision Scientific Co., 1750 N. Springfield Ave., Chicago, Ill.



Draining Underseat Heaters

Underseat heaters, as the name implies, are located under the front seat, much lower than dash-located heaters, and cannot be thoroughly drained by opening the usual radiator cock and engine block drain. Some coolant will remain in the underseat type heater.

If the car is to stand idle in freezing

weather, steps should be taken to completely drain the underseat type heater. Since no individual drain cocks are provided to drain the heater, because of inaccessibility, it is necessary to disconnect the inlet and outlet hose at the heater, and blow undrained liquid out of the heater with compressed air.

(Continued on page 3)



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498 Winspear Avenue, Buffalo, N. Y.

A. P. I. 1941 Campaign Release

The Lubrication Committee of the American Petroleum Institute has just released a complete folder covering in detail its 1941 campaign for Dealer and Consumer Education.

This folder covers the complete 4-point cooperative program of the A. P. I. Lubrication Committee explaining in detail the Sound Slide Film, the Dealer Reference Folder, the Consumer Safety leaflet and the commanding window posters. The folder also explains how all this highly instructive and valuable material can be obtained at a very attractive cost. The purpose of all this educational material, is to tell the complicated and technical story of chassis lubrication and crankcase oil change in simple, understandable language. Due to the very nature of this year's combination of stories, all of this material is more elaborate and far more complete in detail than last year's.

In this new Film there are 87% more slides than last year's film.

The handy Reference Dealer Booklet, to be effective, requires 370% more illustration than last year's—a total of 94 drawings. The Consumer Safety Leaflet, to tell a convincing and interesting story, requires 215% more illustration than the 1940 handout.

If you have not already received your copy of "1941 Model Dealer and Consumer Educational Campaign," covering complete chassis lubrication and crankcase oil-change, send your request to Lubrication Committee, American Petroleum Institute, 50 West 50th Street, New York City, or National Lubricating Grease Institute, 498 Winspear, Buffalo, N. Y. There is no charge for this informative bulletin.

(Continued from page 2)

Many motorists drain the anti-freeze solution quite early in the spring season, believing no more freezing weather will occur; or a car without anti-freeze solution may be driven from southern states into northern territory where freezing weather prevails at night. Under such conditions the underseat heater may be damaged unless it is completely drained.

Car Manufacturers' Latest Recommendations*

CHEVROLET RUBBER SHACKLES

Two different design spring shackles are being used at the rear end of the rear chassis springs on 1941 Chevrolet passenger cars. The threaded type as used in 1940 is continued as one of the two designs, and all service operations remain unchanged on this type. The new type shackle introduced on some of the 1941 models is rubber bushed; both shackle pins being completely rubber insulated from the spring and hanger eyes.

Cars equipped with this new shackle, in addition to the regular production Inlox bushings at the front eyes of all passenger car rear springs, and rubber insulation at the rear spring seats, will have rear chassis springs completely insulated from the frame and rear axle.

The new shackle assembly consists of the outer shackle plate with both pins serrated through the plate and swaged in place, two synthetic rubber bushings (each in two halves), the inner shackle plate and the two special lock nuts.

The rubber bushings fitting in each spring and hanger eye are in two halves due to the shoulder at the outer end of each. When installed and prior to tightening the lock nuts, the bushings are $\frac{1}{4}$ in. longer than the space between the two shackle plates when tightened in place. Tightening the lock nuts, until the inner plate "bottoms" on the pin shoulders, forces this excess rubber into the eye and around the pins, resulting in a tightly locked joint. The castelated sections of the special lock nuts tighten firmly against the pin threads when the nuts are pulled up tightly.

All shackle movement in relation to the spring and hanger eyes is taken by the flexibility of the rubber bushings, since the pins are solidly locked to the bushings, and the bushings cannot turn in the eyes.

To remove this shackle, it is only necessary to raise the car enough to relieve the load, remove the two lock nuts and inner shackle plate which relieves the pressure or load on the bushings. The outer shackle plate with pins, and all bushings may now be removed from the spring and hanger eyes.

To install the rubber bushed spring shackle proceed as follows:

1. Raise the car as necessary to provide the proper distance between the spring hanger and spring eye to install the shackle.
2. Wipe free of all dirt and grease, the bushing holes in the spring hanger and spring eye, both shackle plates and pins, and the inside and outside of both bushings.

3. Install one bushing in the hanger and spring eye (two halves to each bushing) with the bushing shoulder or collar to the outside of each hole.

4. Insert the shackle pins through the bushings (plate with pins attached) with the attached shackle plate toward the outside of the car, threaded ends of the pins toward the car centerline.

5. Install the inner shackle plate, and tighten the lock nuts about halfway onto the pins.

6. Lower the car and allow to stand normally with the weight on the wheels at curb weight—no passengers or load in the car. Bounce the back end of the car up and down several times to center and seat the rubber bushings. Then, when the car comes to rest normally, tighten both lock nuts until the inner shackle plate "bottoms" on the shoulders of the pins.

This new rubber-bushed shackle requires no lubrication at any time, and during car lubrication periods care should be exercised to prevent the spraying of lubricant of any kind on these shackles—this also applies to the spring seats and rear spring front eye attachment, since these points also are rubber insulated.

All parts of this new design shackle are serviced, and parts will be available through authorized dealers.

CHRYSLER, DE SOTO, DODGE, PLYMOUTH GEAR SHIFT VACUUM CYLINDER AIR FILTER

The power shift or gear shift vacuum cylinder is special equipment on all 1941 Chrysler Corporation passenger cars, with the exception of the Chrysler model C-33. With this unit there is an air intake filter, fastened to the frame X member on the Plymouth cars and the frame side rail on the Chrysler, DeSoto and Dodge cars. Every 15,000 miles, remove the filter, disconnect the flexible hose inlet, wash filter in kerosene, dip in SAE 50 and reassemble.

CHRYSLER, DE SOTO, DODGE PEDAL SHAFT

Chrysler, DeSoto and Dodge 1941 models may be found with either one or two fittings for lubrication of the pedal shaft.

CHRYSLER SPRINGS

Rear springs on 1941 Chrysler models C-28 and C-30 are metal covered; lubricate if necessary with semi-fluid grease without graphite. On model C-33, springs are not covered and have wax liners; do not lubricate.

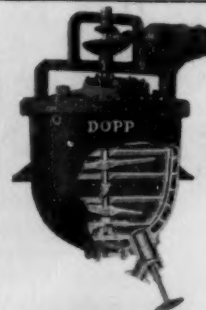
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